

CLAIMS

1. A self-ballasted fluorescent lamp comprising:

a fluorescent lamp;

a lighting circuit having a one-package switch, inductors, and capacitors, said one-package switch containing in a single package a pair of field effect transistors that serve as inverter switches for driving the fluorescent lamp; and

a circuit board having a first face facing away from said fluorescent lamp and a second face facing towards said fluorescent lamp, said first face having at least both a smoothing capacitor and a current-limiting inductor, which have relatively large dimensions, mounted thereon;

wherein:

said one-package switch is a generally rectangular surface mounting device with a length and width respectively not exceeding 6 mm and provided with terminals extending from two opposing sides thereof; and

said one-package switch is surface mounted on either said first face or said second face of said circuit board through said terminals.

2. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

said fluorescent lamp has electrodes; and

said one-package switch is surface mounted on said second face of said circuit board, at a location apart from said electrodes.

3. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

said one-package switch is surface mounted on said second face of said circuit board; and

no components are mounted on the area of said first face that corresponds to the area of said second face where said one-package switch is mounted.

4. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

said one-package switch is surface mounted on said second face of said circuit board; and

no components that emit heat are mounted on the area of said first face that corresponds to the area of said second face where said one-package switch is mounted.

5. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

said one-package switch is surface mounted in such an orientation that the field effect transistor that has a higher on-resistance faces the peripheral edge of said circuit board.

6. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

said self-ballasted fluorescent lamp includes:

a base disposed at said second-face side of said circuit board;

a through hole formed through said circuit board so as to extend from said first face to said second face; a long-tip type capillary tube extending from said fluorescent lamp so that the tip of said capillary tube pass through said through hole towards said base, and

a main amalgam enclosed in said capillary tube;

wherein:

said one-package switch is mounted near said through hole.

7. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

said circuit board is of a double-side mounting type; and

said one-package switch is surface mounted on said first face of said circuit board.

8. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

said field effect transistors are complementary.

9. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

the drain-source voltage of said field effect transistors is set at 200V or more, while the drain current of said field effect transistors is set at 0.5A or more.

10. A self-ballasted fluorescent lamp comprising:

a fluorescent lamp;

a lighting circuit having a one-package switch, inductors, and capacitors, said one-package switch containing in a single package a pair of field effect transistors that serve as inverter switches for driving the fluorescent lamp;

a circuit board having a first face facing away from said fluorescent lamp and a second face facing towards said fluorescent lamp, said first face having at least both a smoothing capacitor and a current-limiting inductor, which have relatively large dimensions, mounted thereon; and

a base disposed at the second-face side of said circuit board;

wherein:

said one-package switch is a generally rectangular surface mounting device with a length and width respectively not exceeding 6 mm; and

said lighting circuit is contained in said base.

11. A self-ballasted fluorescent lamp as claimed in claim 1, wherein:

said base has an opening at the base end thereof;

said circuit board is positioned so as to close off said opening; and

said one-package switch is attached to said first face of said circuit board.

12. A luminaire comprising:

a main body; and

a self-ballasted fluorescent lamp as claimed in any one of the claims from claim 1 to claim 11, said self-ballasted fluorescent lamp attached to said main body.